

STATISTICS WORKSHEET-3

Q1 to Q9 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following is the correct formula for total variation?
 - a) Total Variation = Residual Variation – Regression Variation
 - b) Total Variation = Residual Variation + Regression Variation
 - c) Total Variation = Residual Variation * Regression Variation**
 - d) All of the mentioned
2. Collection of exchangeable binary outcomes for the same covariate data are called_____outcomes.
 - a) random
 - b) direct
 - c) binomial**
 - d) none of the mentioned
3. How many outcomes are possible with Bernoulli trial?
 - a) 2**
 - b) 3
 - c) 4
 - d) None of the mentioned
4. If H_0 is true and we reject it is called
 - a) Type-I error
 - b) Type-II error**
 - c) Standard error
 - d) Sampling error
5. Level of significance is also called:
 - a) Power of the test
 - b) Size of the test**
 - c) Level of confidence
 - d) Confidence coefficient
6. The chance of rejecting a true hypothesis decreases when sample size is:
 - a) Decrease
 - b) Increase
 - c) Both of them**
 - d) None
7. Which of the following testing is concerned with making decisions using data?
 - a) Probability
 - b) Hypothesis**
 - c) Causal
 - d) None of the mentioned
8. What is the purpose of multiple testing in statistical inference?
 - a) Minimize errors
 - b) Minimize false positives
 - c) Minimize false negatives
 - d) All of the mentioned**

9. Normalized data are centred at ____ and have units equal to standard deviations of the original data

- a) 0
- b) 5
- c) 1
- d) 10

Q10 and Q15 are subjective answer type questions, Answer them in your own words briefly.

- 10. What Is Bayes' Theorem?
- 11. What is z-score?
- 12. What is t-test?
- 13. What is percentile?
- 14. What is ANOVA?
- 15. How can ANOVA help?

q10

Bayes' Theorem, named after 18th-century British mathematician Thomas Bayes, is a mathematical formula for determining conditional probability. Conditional probability is the likelihood of an outcome occurring, based on a previous outcome having occurred in similar circumstances.

q11

A Z-score is a numerical measurement that describes a value's relationship to the mean of a group of values. Z-score is measured in terms of standard deviations from the mean.

q12

The T-Test is used for comparing the two independent groups through which the statistical significance can be extracted.

q13

A percentile is a term that describes how a score compares to other scores from the same set

q14

Analysis of variance (ANOVA) is a collection of statistical models and their associated estimation procedures (such as the "variation" among and between groups) used to analyze the differences among means.

q15

This can help to improve the accuracy of data predictions and analyses. Additionally, ANOVA can help to identify relationships between different variables in a data set. This information can be used to improve data models and predictions.